

Title (en)

Electrophotographical optical memory system.

Title (de)

Elektrophotographisches und optisches Speichersystem.

Title (fr)

Système de mémoire électrophotographique et optique.

Publication

EP 0347480 A1 19891227 (EN)

Application

EP 88109941 A 19880622

Priority

EP 88109941 A 19880622

Abstract (en)

An optical memory system for storage and retrieval of digital data using a source of writing light in the visible light range and a separate source of near infrared, polarized reading light. The writing light is amplitude modulated by a signal containing the digital data to be stored. Horizontal and vertical deflectors deflect the beams to scan horizontally and vertically in response to control signals. The scanning beams are focused to a focal point to impinge upon a stationary medium manufactured of a dry film having submicron electrically photosensitive particles embedded in a thermoplastic layer mounted on a substantially transparent electrically conductive substrate. The particles are insensitive to light at the reading light wavelength. The particles are initially uncharged and the film is sensitive to light after receiving an initial surface charge. The regions of the medium with the charged particles and with the uncharged particles cause differing angular rotation of the electric and magnetic field vectors of the reading light, with the degree of rotation of the reading light after passing through the medium indicating whether a digital data bit of one or zero is recorded. A fixed mask is positioned in the focal plane of the lens and in juxtaposition with the medium. The mask is opaque to the writing and reading light beams and has a matrix of rows and columns of transparent apertures. The apertures define the extent of the regions of the medium with the charged and uncharged particles. A Senarmont polarization compensator is positioned to be exposed to the reading light beam after passing through the mask apertures and the medium and is responsive only to the incident of the reading light thereon. The compensator detects the angular rotation of the fields by measuring the reading light beam intensity and relating it to a predetermined reference, and modulates the amplitude of an indicator signal from a photodiode so as to produce an output signal if rotation is detected indicative of a recorded information bit of stored digital data at a one or a zero binary state. Related control circuitry provides the scan control signals, and a heatable erasure pad selectively erases portions of the medium.

IPC 1-7

G11B 7/00; G11B 9/00; G11B 9/08; G11B 11/00

IPC 8 full level

G11B 11/00 (2006.01); **G11B 11/08** (2006.01)

CPC (source: EP)

G11B 11/00 (2013.01); **G11B 11/08** (2013.01)

Citation (search report)

- [A] DE 3638838 A1 19880519 - SCHNUR NICOLAS [DE]
- [E] US 4757472 A 19880712 - MAGEE FREDERICK N [US], et al
- [A] PATENT ABSTRACTS OF JAPAN, vol. 10, no. 41 (P-429)[2098], 18th February 1986; & JP-A-60 187 953 (HITACHI SEISAKUSHO K.K.) 25-09-1985

Designated contracting state (EPC)

AT BE CH DE ES FR GB GR IT LI LU NL SE

DOCDB simple family (publication)

EP 0347480 A1 19891227

DOCDB simple family (application)

EP 88109941 A 19880622